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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,095

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EXAMINER

HALIYUR, VENKATESH N

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/822,095

Applicant(s)

SHINODA ET AL.

Examiner

Venkatesh Haliyur

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. Claims 1-28 are pending in the application.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Burgess [US Pat: 5,695,859].

Regarding claim 1, Burgess in the invention of "Pressure Activated Switching Device" disclosed in their invention a communication apparatus (switching device) having a plurality of communication elements that are electrically connected to an electrically conductive layer or an electromagnetic action transfer layer (**col 2, lines 26-35**), characterized in that each of the communication elements has a communications capability of conveying a signal via the conductive layer or the electromagnetic action transfer layer to other neighboring communication elements (**primary and secondary electrodes, col 2, lines 51-63, col 15, lines 13-24**).

Regarding claim 2, Burgess disclosed a communication apparatus having a plurality of distributed communication elements, characterized in that each of the communication elements has such a coverage that allows local communications with other neighboring communication elements (**primary and secondary electrodes, col 2, lines 51-63, col 15, lines 13-24**), the local communications allowing sequential transmissions of a signal between the communication elements to convey the signal to a target communication element (**col 14, lines 11-33**).

Regarding claims 3-4, Burgess disclosed that no individual conductive wires are formed between the communication elements (**intrinsically conductive expanded polymer, col 6, lines 13-22**).

Regarding claims 5-6, Burgess disclosed that the plurality of communication elements (**plurality of switching devices**) are classified into the first to Nth order ranks in ascending order of communication management capabilities of the elements (**col 11, lines 66-67, col 12, lines 1-5**).

Regarding claims 7-8, Burgess disclosed that the communication elements of each rank function as the first order communication element for conveying a signal to other communication elements that exist within a certain neighboring range therefrom (**successive layers**), to realize local communications with the neighboring communication elements (**col 12, lines 37-49**).

Regarding claims 9-10, Burgess disclosed that the Mth order communication elements have at least a function of the (M-1)th order communication elements, which is necessary for communication management, and the Mth order

communication elements can be less densely populated (**thickness of the layers**) than the (M-1)th order communication elements (**col 12, lines 6-24**).

Regarding claim 11, Burgess disclosed a communication device for transmitting a signal to other communication elements existing within a coverage, the device comprising first and second signal layers isolated from each other, and a communication element connected electrically to these layers (**col 2, lines 1-25**), wherein the coverage is determined in accordance with the resistances of the first and second signal layers and the capacitance between the first and second signal layers (**col 8, lines 27-50**), allowing the communication element to transmit a signal by discharging electric charges (**electric current**) to the first and/or second signal layer (**col 8, lines 51-65**).

Regarding claim 12, Burgess disclosed a communication device for transmitting a signal to other communication elements existing within a coverage, the device comprising first and second signal layers, and a communication element connected electrically to these layers (**col 8, lines 51-65**), wherein the first signal layer and the second signal layer are brought into conduction in the communication element, thereby allowing a signal to be transmitted (**col 9, lines 9-26**).

Regarding claims 13-14, Burgess disclosed a high resistance layer which has a resistance higher than those of the first and second signal layers and which brings these layers into conduction (**col 2, lines 16-25**).

Regarding claims 15-16, Burgess disclosed a high resistance layer which has a resistance higher than that of the first signal layer and which is electrically

connected to the first signal layer, and a power supply layer which is electrically connected to the high resistance layer and which supplies power (**source of current**) to the communication element (**col 10, lines 23-36**).

Regarding claim 17, Burgess disclosed that the coverage is determined in accordance with the resistance of the first signal layer (**col 4, lines 60-67, col 5, lines 1-27**).

Regarding claim 18, Burgess disclosed a method for circuit board implementation including film- type or sheet-type circuit board, comprising distributing a plurality of circuit elements on an electrically conductive circuit board (**col 8, lines 51-65**), the circuit elements each of which has a communications capability of conveying a signal within each predetermined coverage, thereby mounting the circuit elements on the board without forming individual conductive wires between the circuit elements (**col 12, lines 37-54**).

Regarding claim 19, Burgess disclosed a tactile sensor (**pressure sensitive switch**) comprising at least one sensor element including a circuit for measuring stress (**force detection means, col 2, lines 52-64, col 12, lines 55-64**) or temperature to convert it into a coded signal, and an electrically conductive flexible structure which conveys an output signal from the sensor element (**col 12, lines 65-67, col 13, lines 1-14**).

Regarding claims 20-21, Burgess disclosed a plurality of signal terminals of the sensor (**switch**) elements are connected to an electrically continuous, electrically conductive rubber region (**elastomeric layer**) of the sensor (**col 8, lines 13-26**) and

the sensor element is provided with two electrodes, which electrically contact two electrically conductive rubber sheets of the elastic structure (**col 8, lines 27-50**).

Regarding claims 22-23, Burgess disclosed that electrodes of the sensor element electrically contact two or more electrically conductive rubber sheets of the elastic structure by means of pin-shaped projections (**conical peaks**) protruded from the sensor element (**col 13, lines 50-67, col 14, lines 1-32**) and the sensor element is provided on one surface with two or three electrodes, each of which electrically contacts a plurality of electrically conductive rubber regions formed in a single layer of the elastic structure (**col 8, lines 51-65**).

Regarding claims 24-25, Burgess disclosed a neighborhood stress is detected in accordance with a variation in capacitance between an LSI chip of the sensor element and an electrode component connected thereto (**col 13, lines 26-39**) and the electrode component connected to the sensor element is supported at a small area near its center, thereby allowing the electrode to be deformed (**compression**) with a good sensitivity to an uneven pressure on the surface of the electrode (**col 13, lines 39-49**).

Regarding claims 26-27, Burgess disclosed a neighborhood stress is detected by an LSI chip in accordance with a variation in resistance of a pressure-sensitive electrically conductive rubber sheet connected thereto (**col 13, lines 50-61**) and a neighborhood stress is detected in accordance with a variation in the amount of light arriving at an optical sensor on an LSI chip of the sensor element (**col 13, lines 61-67, col 14, lines 1-33**).

Regarding claim 28, Burgess disclosed a communication device which conveys a signal to other communication elements existing within a coverage, comprising first and second signal layers isolated from each other, and a communication element electro-magnetically connected to these layers (**col 2, lines 26-50**), wherein the coverage is determined in accordance with an attenuation factor of an electromagnetic wave, and the communication element emits an electromagnetic wave or a beam of light into the layers including the first signal layer and the second signal layer, thereby transmitting a signal (**col 12, lines 66-67, col 13, lines 1-20**).

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached @ (571)-272-7884. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.



Art Unit: 2616

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

Venkatesh Haliyur

Patent Examiner

*WH* 07/17/07

EDAN ORGAD  
PRIMARY PATENT EXAMINER

*Edan Orgad* 7/27/07